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Sequence Listing was accepted.

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Reviewer: Durreshwar Anjum

Timestamp: [year=2010; month=11; day=30; hr=14; min=36; sec=15; ms=130;
]

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Application No: 10560303 Version No: 3.0

Input Set:

Output Set:

Started: 2010-11-22 16:47:52.407
Finished: 2010-11-22 16:47:55.821
Elapsed: 0 hr(s) 0 min(s) 3 sec(s) 414 ms
Total Warnings: 88
Total Errors: 0
No. of SeqIDs Defined: 120
Actual SeqID Count: 120

Error code	Error Description
W 402	Undefined organism found in <213> in SEQ ID (1)
W 402	Undefined organism found in <213> in SEQ ID (2)
W 402	Undefined organism found in <213> in SEQ ID (3)
W 402	Undefined organism found in <213> in SEQ ID (4)
W 402	Undefined organism found in <213> in SEQ ID (5)
W 402	Undefined organism found in <213> in SEQ ID (6)
W 402	Undefined organism found in <213> in SEQ ID (7)
W 402	Undefined organism found in <213> in SEQ ID (8)
W 213	Artificial or Unknown found in <213> in SEQ ID (9)
W 213	Artificial or Unknown found in <213> in SEQ ID (10)
W 213	Artificial or Unknown found in <213> in SEQ ID (11)
W 213	Artificial or Unknown found in <213> in SEQ ID (12)
W 213	Artificial or Unknown found in <213> in SEQ ID (13)
W 213	Artificial or Unknown found in <213> in SEQ ID (14)
W 213	Artificial or Unknown found in <213> in SEQ ID (15)
W 213	Artificial or Unknown found in <213> in SEQ ID (16)
W 213	Artificial or Unknown found in <213> in SEQ ID (17)
W 213	Artificial or Unknown found in <213> in SEQ ID (18)
W 213	Artificial or Unknown found in <213> in SEQ ID (19)
W 213	Artificial or Unknown found in <213> in SEQ ID (20)

Input Set:

Output Set:

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Total Warnings: 88
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Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (21)
W 213	Artificial or Unknown found in <213> in SEQ ID (22)
W 213	Artificial or Unknown found in <213> in SEQ ID (23)
W 213	Artificial or Unknown found in <213> in SEQ ID (24)
W 213	Artificial or Unknown found in <213> in SEQ ID (25)
W 213	Artificial or Unknown found in <213> in SEQ ID (26)
W 213	Artificial or Unknown found in <213> in SEQ ID (27)
W 213	Artificial or Unknown found in <213> in SEQ ID (28) This error has occurred more than 20 times, will not be displayed
W 402	Undefined organism found in <213> in SEQ ID (39)
W 402	Undefined organism found in <213> in SEQ ID (43)
W 402	Undefined organism found in <213> in SEQ ID (44)
W 402	Undefined organism found in <213> in SEQ ID (46)
W 402	Undefined organism found in <213> in SEQ ID (50)
W 402	Undefined organism found in <213> in SEQ ID (51)
W 402	Undefined organism found in <213> in SEQ ID (54)
W 402	Undefined organism found in <213> in SEQ ID (55)
W 402	Undefined organism found in <213> in SEQ ID (56)
W 402	Undefined organism found in <213> in SEQ ID (59)
W 402	Undefined organism found in <213> in SEQ ID (61)
W 402	Undefined organism found in <213> in SEQ ID (62) This error has occurred more than 20 times, will not be displayed

SEQUENCE LISTING

<110> Inouye, Masayori
Zhang, Junjie
Zhang, Yong Long
Qing, Guoliang
Suzuki, Motoo

<120> mRNA Interferases and Methods of Use Thereof

<130> University of Medicine & Dentistry of New Jersey (601-1-131PCT)

<140> 10560303

<141> 2010-11-22

<150> PCT/US2004/018571

<151> 2004-06-14

<150> 60/543, 693

<151> 2004-02-11

<150> 60/478, 515

<151> 2003-06-13

<160> 120

<170> FastSEQ for Windows Version 4.0

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<211> 336

<212> DNA

<213> E. coli

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aaaggtagcg agcaagctgg acatcgtcca gctgttgtcc ttagtcctt catgtacaac 120
aacaaaacag gtatgtgtct gtgtgttcct tgtacaacgc aatcaaaagg atatccgttc 180
gaagttgttt tatccggtca ggaacgtgat ggcgttagcgt tagctgatca ggtaaaaagt 240
atcgcctggc gggcaagagg agcaacgaag aaaggaacag ttgccccaga ggaattacaa 300
ctcattaaag ccaaattaa cgtactgatt ggtag 336

<210> 2

<211> 111

<212> PRT

<213> E. coli

<400> 2

Met Val Ser Arg Tyr Val Pro Asp Met Gly Asp Leu Ile Trp Val Asp
1 5 10 15

Phe Asp Pro Thr Lys Gly Ser Glu Gln Ala Gly His Arg Pro Ala Val
20 25 30

Val Leu Ser Pro Phe Met Tyr Asn Asn Lys Thr Gly Met Cys Leu Cys
35 40 45

Val Pro Cys Thr Thr Gln Ser Lys Gly Tyr Pro Phe Glu Val Val Leu

50 55 60
Ser Gly Gln Glu Arg Asp Gly Val Ala Leu Ala Asp Gln Val Lys Ser
65 70 75 80
Ile Ala Trp Arg Ala Arg Gly Ala Thr Lys Lys Gly Thr Val Ala Pro
85 90 95
Glu Glu Leu Gln Leu Ile Lys Ala Lys Ile Asn Val Leu Ile Gly
100 105 110

<210> 3
<211> 333
<212> DNA
<213> E. coli

<400> 3
atggaaagag gggaaatctg gcttgtctcg cttgatccta ccgcaggtca tgagcagcag 60
ggaacgcggc cgggtgtat tgcacacccg gcggccctta atcgcgtgac ccgcctgcct 120
gttggatgtgc ccgttaaccag cggaggcaat tttgcccga ctgcggcgtt tgcgggtgtcg 180
ttggatgggt ttggcatacg taccacaggt gttgtacggt gcatcaacc ccggacaatt 240
gatatgaaaag cacggggcgg aaaacgactc gaacgggttc cggagactat catgaacgaa 300
gttcttggcc gcctgtccac tattctgact tga 333

<210> 4
<211> 110
<212> PRT
<213> E. coli

<400> 4
Met Glu Arg Gly Glu Ile Trp Leu Val Ser Leu Asp Pro Thr Ala Gly
1 5 10 15
His Glu Gln Gln Gly Thr Arg Pro Val Leu Ile Val Thr Pro Ala Ala
20 25 30
Phe Asn Arg Val Thr Arg Leu Pro Val Val Val Pro Val Thr Ser Gly
35 40 45
Gly Asn Phe Ala Arg Thr Ala Gly Phe Ala Val Ser Leu Asp Gly Val
50 55 60
Gly Ile Arg Thr Thr Gly Val Val Arg Cys Asp Gln Pro Arg Thr Ile
65 70 75 80
Asp Met Lys Ala Arg Gly Gly Lys Arg Leu Glu Arg Val Pro Glu Thr
85 90 95
Ile Met Asn Glu Val Leu Gly Arg Leu Ser Thr Ile Leu Thr
100 105 110

<210> 5
<211> 249
<212> DNA
<213> E. coli

<400> 5
atgatccaca gtagcgtaaa gcgttgggg aattcaccgg cgggtgcggat cccggctacg 60
ttaatgcagg cgctcaatct gaatattgtat gatgaagtga agattgacct ggtggatggc 120

aaattaatta ttgagccagt gcgtaaagag cccgtatTTA cgcttgctga actggtaac 180
gacatcacgc cggaaaacct ccacgagaat atcgactggg gagagccgaa agataaggaa 240
gtctggtaa 249

<210> 6
<211> 82
<212> PRT
<213> E. coli

<400> 6
Met Ile His Ser Ser Val Lys Arg Trp Gly Asn Ser Pro Ala Val Arg
1 5 10 15
Ile Pro Ala Thr Leu Met Gln Ala Leu Asn Leu Asn Ile Asp Asp Glu
20 25 30
Val Lys Ile Asp Leu Val Asp Gly Lys Leu Ile Ile Glu Pro Val Arg
35 40 45
Lys Glu Pro Val Phe Thr Leu Ala Glu Leu Val Asn Asp Ile Thr Pro
50 55 60
Glu Asn Leu His Glu Asn Ile Asp Trp Gly Glu Pro Lys Asp Lys Glu
65 70 75 80
Val Trp

<210> 7
<211> 258
<212> DNA
<213> E. coli

<400> 7
atgcataccca cccgactgaa gagggttggc ggctcagtt tgctgaccgt cccaccggca 60
ctgctgaatg cgctgtctct gggcacagat aatgaagttg gcatggtcat tgataatggc 120
cggctgattt ttgagccgta cagacgcccc caatattcac tggctgagct actggcacag 180
tgtgatccga atgctgaaat atcagctgaa gaacgagaat ggctggatgc accggcgact 240
ggtcaggagg aaatctga 258

<210> 8
<211> 85
<212> PRT
<213> E. coli

<400> 8
Met His Thr Thr Arg Leu Lys Arg Val Gly Gly Ser Val Met Leu Thr
1 5 10 15
Val Pro Pro Ala Leu Leu Asn Ala Leu Ser Leu Gly Thr Asp Asn Glu
20 25 30
Val Gly Met Val Ile Asp Asn Gly Arg Leu Ile Val Glu Pro Tyr Arg
35 40 45
Arg Pro Gln Tyr Ser Leu Ala Glu Leu Leu Ala Gln Cys Asp Pro Asn
50 55 60
Ala Glu Ile Ser Ala Glu Glu Arg Glu Trp Leu Asp Ala Pro Ala Thr
65 70 75 80
Gly Gln Glu Glu Ile 85

<210> 9
<211> 24
<212> PRT
<213> Artificial Sequence

<220>
<223> T54 to K77 fragment of E. coli MazE

<400> 9
Thr Leu Ala Glu Leu Val Asn Asp Ile Thr Pro Glu Asn Leu His Glu
1 5 10 15
Asn Ile Asp Trp Gly Glu Pro Lys
20

<210> 10
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> N60 to K77 fragment of E. coli MazE

<400> 10
Asn Asp Ile Thr Pro Glu Asn Leu His Glu Asn Ile Asp Trp Gly Glu
1 5 10 15
Pro Lys

<210> 11
<211> 30
<212> RNA
<213> Artificial Sequence

<220>
<223> synthetic RNA substrate

<400> 11
uaagaaggag auauacauau gaaucaaauc 30

<210> 12
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> single stranded oligonucleotide

<400> 12
gctcgatct acaatgtaga ttgatata ctgtatctac atatgatagc 50

<210> 13
<211> 50

<212> DNA
<213> Artificial Sequence

<220>
<223> single stranded oligonucleotide

<400> 13
cgagcataga tgttacatct aactatataat gacatagatg tatactatcg 50

<210> 14
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic oligonucleotide

<400> 14
agatctcgat cccgcaaatt aat 23

<210> 15
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA primer

<400> 15
tttagagatca atttcctgcc gttttac 27

<210> 16
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA primer

<400> 16
ttaaagatcg tcaacgtaac cg 22

<210> 17
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA primer

<400> 17
tgcttttat cccacgggca gc 22

<210> 18
<211> 24

<212> DNA
<213> Artificial Sequence

<220>
<223> DNA primer

<400> 18
gcccagttca ccgcgaagat cgtc

24

<210> 19
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA primer

<400> 19
ggttttgatt tgctcccaac gggcaag

27

<210> 20
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA primer

<400> 20
catttccccc tccagtttag cctggc

27

<210> 21
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA primer

<400> 21
ttgccagact tcttcattt tttcgag

27

<210> 22
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA primer

<400> 22
gatccccaca atgcgggtgac gagt

24

<210> 23
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA primer

<400> 23
cacgttgtcc actttgttca ccgc 24

<210> 24
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA primer

<400> 24
cagttcagcg ccgaggaaac gcat 24

<210> 25
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA primer

<400> 25
gcgttcgtcg tcggcccaac cgga 24

<210> 26
<211> 30
<212> RNA
<213> Artificial Sequence

<220>
<223> antisense RNA

<400> 26
gauuugauuc auauguauau cuccuucuua 30

<210> 27
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> complementary DNA

<400> 27
gatttggattc atatgtatat ctccttctta 30

<210> 28
<211> 22
<212> DNA
<213> Artificial Sequence

<220>

<223> DNA primer

<400> 28
agaatgtgcg ccattttca ct 22

<210> 29
<211> 9
<212> DNA
<213> Artificial Sequence

<220>

<223> DNA fragment from pCold I vector

<400> 29
taatacaccc 9

<210> 30
<211> 15
<212> DNA
<213> Artificial Sequence

<220>

<223> synthetic oligonucleotide

<400> 30
atgaatcaca aagtgc 15

<210> 31
<211> 18
<212> DNA
<213> Artificial Sequence

<220>

<223> DNA fragment from pCold I vector

<400> 31
catcatcatc atcatcat 18

<210> 32
<211> 12
<212> DNA
<213> Artificial Sequence

<220>

<223> DNA fragment from pCold I vector

<400> 32
atcgaaggta gg 12

<210> 33
<211> 60
<212> DNA
<213> Artificial Sequence

<220>

<223> multiple cloning site

<400> 33
catatggagc tcggtaacct cgagggatcc gaattcaagc ttgtcgacct gcagtctaga 60

<210> 34
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA primer

<400> 34
caggagauac cucaaugauc a 21

<210> 35
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA primer

<400> 35
ctcaatgatc acaggagata c 21

<210> 36
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA primer

<400> 36
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<210> 37
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA primer

<400> 37
gggacaggag atacct 16

<210> 38
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA primer

<400> 38
tgtccttat ggagttacta gtg 23

<210> 39
<211> 330
<212> DNA
<213> *Bacillus halodurans*

<400> 39
atgccagtag cgatagagg gaatcttgtt tatgttagact ttaacccaca atcgggtcat 60
gaccaagccg ggacacgacc ggctattgtt ttgtccccata aattatattaa taaaaacaca 120
ggtttgcgg tggtttgtcc aattaccaga caacaaaaag gttatcctt tgaaatagaa 180
ataccaccgg ggttacctat tgaaggggtt attcttactg accaagtaaa aagtctggat 240
tggagagcaa gaaacttca cattaaagga caagcaccag aggaaaactgt tactgattgt 300
ttacaactta ttctatacatt tttatcttaa 330

<210> 40
<211> 363
<212> DNA
<213> *Staphylococcus epidermidis*

<400> 40
atgattagaa gaggagatgt ttathtagcg gatttacac cagttcaagg gtctgaacaa 60
gggggagtaa gacctgttgtatcattcaa aatgatactg gtaataaaata tagtccaact 120
gtaattgttag ctgcgattac tgatggatt aataaagcga aaataccaaac ccacgtagaa 180
attaaaaaga aaaagtataa attagacaaa gattcagttt ttcttcttga acaaattaga 240
acactagata aaaacgtttt aaaagaaaaaa ttaacatttt tatcagagag taaaatgata 300
gaggttgata atgcctttaga tattagtttggattaaata actttgatca tcataaatct 360
taa 363

<210> 41
<211> 411
<212> DNA
<213> *Staphylococcus aureus*

<400> 41
atgattagac gaggagatgt ttathtagca gatttacac cagtagggg atctgaacaa 60
gggggagtca gacctgttgtatcattcaa aatgatactg gtaataaaata tagtccata 120
gttattgttgcggcaataac tggttaggatt aataaagcga aaataccgac acatgttagag 180
attaaaaaga aaaagtataa gttggataaa gactcagtttattattaga acaaattcg 240
acacttgata aaaaacgtt gaaagaaaaaa ctgacgtact tatccgatga taaaatgaaa 300
gaagtagata atgcactaat gattgttttggctgaatg cagtagctca accagaaaaaa 360
ttaggcgctt attatatgtattttcaagataaaataaaa tattgtatataa 411

<210> 42
<211> 351
<212> DNA
<213> *Bacillus subtilis*

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caaggcgggg tgcgccccgt ttttagtgatc caaaatgaca tcggaaatcg ctccagccca 120
actgctatttgcgttgcagccat aacagcacaatcagacaaatcg cggaaattacc aaccacgtc 180
gaaatcgatc caaaacgtca cggttttgaa agagattccg ttattttgttgcg 240
cgacgatttgcgttgcagccat aacagcacaatcg cggaaattacc aaccacgtc 300
gataagggttgcgttgcagccat aacagcacaatcg cggaaattacc aaccacgtc 351

<210> 43
<211> 324
<212> DNA
<213> *Neisseria meningitidis*

<400> 43
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gaaatcaaaa agacacgtcc ttgtgtcgta gtctctcctc ctgaaataca caactatctc 120
aagactgtgc tgatcggtcc catgacgagc ggaagccgtc ctgccccgtt ccgcgtcaat 180
gtcccgcttc aggataaaga cggtttgtt ttgcccgaac agattaggc tgtggataaa 240
gccggattgg tcaaacatct tggcaattta gacaacagta cggtgaaaaa actgtttgca 300
gtattgcagg agatgttgc ctga 324

<210> 44
<211> 366
<212> DNA
<213> *Morganella morgani*

<400> 44
atgcgccggc ggctggtcag gaggaaatct gacatggaaa gaggggaaat ctggcttgc 60
tcgcttgacc ctaccgcagg tcatgagca gaggaaacgc ggcggact gattgtcact 120
ccggctgctt ttaaccgcgt gacccgcctg cctgttgc 180
aattttgcgc gcacagcagg cttgtgtgc tcgcttgc 240
ggcgttgc gttgcgtca accccggacg atcgatatga aagccgcgg cggcaaacga 300
ctcgaacggg tgccagagac tatcatggac gacgttcttgc caccatcctg 360
acctga 366

<210> 45
<211> 321
<212> DNA
<213> *Mycobacterium tuberculosis*

<400> 45
gtggtgattc ggggagcggc ctacagggtc gacttcggcg atgcgaagcg aggccacgag 60
caacgcgggc ggcgcgtacgc cgtggtcatac agcccccgtc cgatgccgtg gagtgttagta 120
accgtggcgc acgtcgac aagcgcggca cctgcgggtt tccgaccaga gctggaagtc 180
atggaaacaa agacacgggtt cctgggtggat cagatccgga cgatcggcat cgtctatgtg 240
cacggcgatc cggtcgacta tctggaccgt gaccaaattgg ccaaggtgga acacgcgtg 300
gcacgataacc ttggctgtg a 321

<210> 46
<211> 109
<212> PRT
<213> *Bacillus halodurans*

<400> 46
Met Pro Val Pro Asp Arg Gly Asn Leu Val Tyr Val Asp Phe Asn Pro
1 5 10 15
Gln Ser Gly His Asp Gln Ala Gly Thr Arg Pro Ala Ile Val Leu Ser
20 25 30
Pro Lys Leu Phe Asn Lys Asn Thr Gly Phe Ala Val Val Cys Pro Ile
35 40 45
Thr Arg Gln Gln Lys Gly Tyr Pro Phe Glu Ile Glu Ile Pro Pro Gly
50 55 60
Leu Pro Ile Glu Gly Val Ile Leu Thr Asp Gln Val Lys Ser Leu Asp
65 70 75 80

Trp Arg Ala Arg Asn Phe His Ile Lys Gly Gln Ala Pro Glu Glu Thr
85 90 95
Val Thr Asp Cys Leu Gln Leu Ile His Thr Phe Leu Ser
100 105

<210> 47
<211> 120
<212> PRT
<213> *Staphylococcus epidermidis*

<400> 47
Met Ile Arg Arg Gly Asp Val Tyr Leu Ala Asp Leu Ser Pro Val Gln
1 5 10 15
Gly Ser Glu Gln Gly Val Arg Pro Val Val Ile Ile Gln Asn Asp
20 25 30
Thr Gly Asn Lys Tyr Ser Pro Thr Val Ile Val Ala Ala Ile Thr Asp
35 40 45
Gly Ile Asn Lys Ala Lys Ile Pro Thr His Val Glu Ile Glu Lys Lys
50 55 60
Lys Tyr Lys Leu Asp Lys Asp Ser Val Ile Leu Leu Glu Gln Ile Arg
65 70 75 80
Thr Leu Asp Lys Lys Arg Leu Lys Glu Lys Leu Thr Phe Leu Ser Glu
85 90 95
Ser Lys Met Ile Glu Val Asp Asn Ala Leu Asp Ile Ser Leu Gly Leu
100 105 110
Asn Asn Phe Asp His His Lys Ser
115 120

<210> 48
<211> 136
<212> PRT
<213> *Staphylococcus aureus*

<400> 48
Met Ile Arg Arg Gly Asp Val Tyr Leu Ala Asp Leu Ser Pro Val Gln
1 5 10 15
Gly Ser Glu Gln Gly Val Arg Pro Val Val Ile Ile Gln Asn Asp
20 25 30
Thr Gly Asn Lys Tyr Ser Pro Thr Val Ile Val Ala Ala Ile Thr Gly
35 40 45
Arg Ile Asn Lys Ala Lys Ile Pro Thr His Val Glu Ile Glu Lys Lys
50 55 60
Lys Tyr Lys Leu Asp Lys Asp Ser Val Ile Leu Leu Glu Gln Ile Arg
65 70 75 80
Thr Leu Asp Lys Lys Arg Leu Lys Glu Lys Leu Thr Tyr Leu Ser Asp
85 90 95
Asp Lys Met Lys Glu Va